WILDLIFE MANAGEMENT AND RESEARCH NOTES

INDIANA DIVISION OF FISH & WILDLIFE

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970	TITLE: 2008 Wild Turkey Brood Production Indices.	1/8/09

Abstract: The statewide mean of 2.6 poults:hen (PI) observed was identical to the 2.6 PI of the 2 prior summers (2006,2007) and not different than the 2.9 PI of the previous 5 years of 200-20076 ($P > 0.05$) . The proportion of hens observed with poults was 80%, similar to the 82% in 2007. The general decreasing trend (1993-2008) in the annual summer production of wild turkeys is indicative of a population whose growth rate is beginning to level off to "maintenance" or stable population level.

Work Plan: # 300FW0BIRD07522 (Formerly WP# 204301; Federal aid PR 16-G-4)

METHODS

In 2008, district wildlife biologists and conservation officers recorded observations of wild turkey hens and poults during July and August. The wild turkey summer brood Production Index (PI) is the total poults/total adult hens (poults:hen ratio) compiled from July and August into one combined index. The August production index is generally higher than in July due to "gang" brood behavior that occurs when several individual broods and hens without broods combine into a single brood flock.

RESULTS and DISCUSSION

A total of 347 observation cards was received for the July and August reporting period with 163 cards reporting at least one turkey observation (Table 1). The 2008 production index was 2.6 poults:hen with 80% of the hens observed with at least 1 poult and the production values are very similar for the past 3 summers(Figure 1). The average size of the 328 broods reported (hens + poults per brood observation) was 8.7 birds, slightly less than the 9.1 mean brood size observed in 2007. A chronic bias in the observation data, that is difficult to assess, is the tendency of some observers to report hens with poults more so than "barren hens". The reporting bias would result in a higher PI than actually occurred.

The 2.6 poults:hen (PI) of the last the past 3 summers is slightly below the 16 year (1993-2007) and 5 year averages (Table 2; Figure 2). Since 1993, the annual PI has decreased with most recent years falling below the overall mean of 3.3 PI from previous years (1993-2007). The downward trend in the PI is considered indicative of a wild turkey population as it makes the transition from a colonizing, reestablishing population with geometric growth to an established population where annual production and growth rate levels off to a maintenance level characteristic of a stabilized population. The lower level of annual production and population growth should be considered in future harvest management decisions.

Regional production summaries (Figure 3) are very limited in their interpretation due to lack of observations reported in some regions (e.g., east-central and west-central). Other potential biases included differences in the potential number of observers and brood detection rates among regions. Climatically, precipitation was above normal throughout much of the turkey range during June 2008 coinciding with the normal early brood period as it was during June 2007 and 2006.

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Table 1. Indiana wild turkey brood production - Summer 2008.

July & August Combined	Adult Hens	No. of Poults	Brood Size *	Poults/ Hen		
Totals	855	2181		2.6		
Means	2.1	6.7	8.7	3.6 **	Total Number of Cards =	347
No. of Observations	411	328	328	328	Cards with ≥ 1 observation	163
SE=	0.09	0.35	0.39	0.18	Percent hens with broods	80%

Jul-08	Adult Hens	No. of Poults	Brood Size *	Poults/ Hen		
Totals	383	925		2.4		
Means	2.0	6.5	8.4	3.7 **	Total Number of Cards =	174
No. of Observations	196	143	143	143	Cards with ≥ 1 observation	76
SE=	0.08	0.36	0.40	0.19	Percent hens with broods	73%

Aug-08	Adult Hens	No. of Poults	Brood Size *	Poults/ Hen		
Totals	472	1256	1653	2.7		
Means	2.2	6.8	8.9	3.6**	Total Number of Cards =	173
No. of Observations	215	185	185	185	Cards with ≥ 1 observation	87
SE=	0.09	0.34	0.39	0.17	Percent hens with broods	86%

* Brood size = all hens + all poults observed as a group at one time
** The mean poults/hen calculated using only those observations where hens were observed with broods.
The total poults/total hens observed for July + August = annual Production Index (PI).

Figure 1 Wild Turkey Brood Production

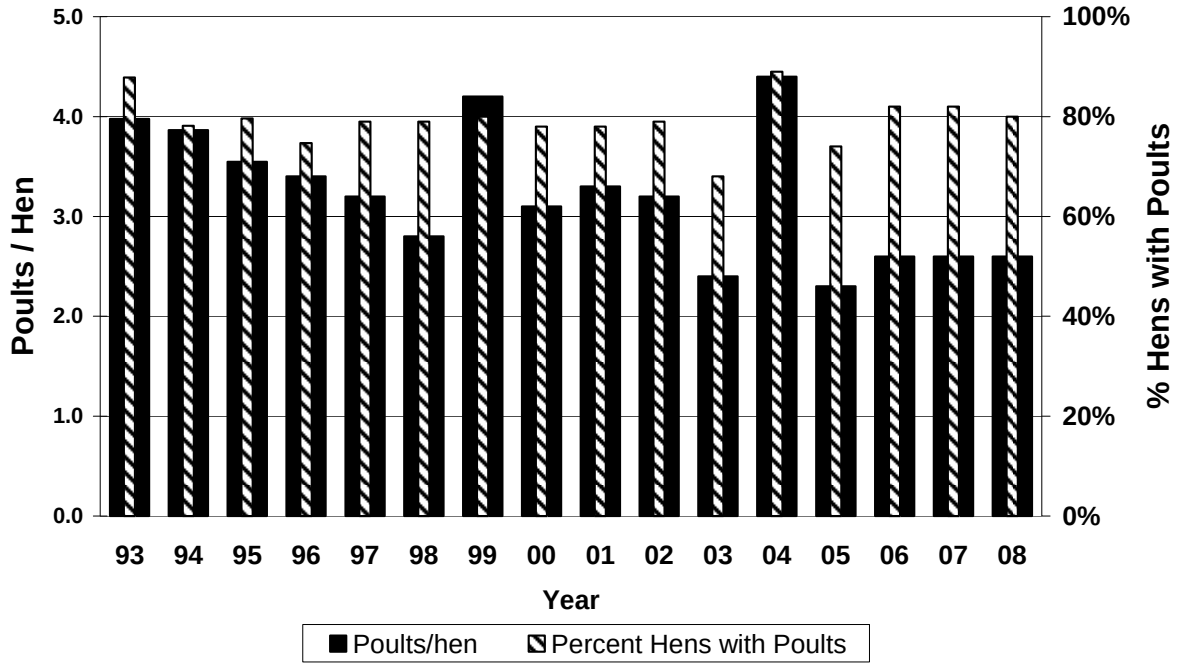

Table 2. Indiana wild turkey production indices, 1993-2008.

Year	Poults : Hen [a]	% Hens with poults	No. of Observations
93	4.0	88%	101
94	3.9	78%	175
95	3.5	80%	121
96	3.4	75%	142
97	3.2	79%	126
98	2.8	79%	134
99	4.2	80%	229
00	3.1	78%	227
01	3.3	78%	313
02	3.2	79%	338
03	2.4	68%	312
04	4.4	89%	597
05	2.3	74%	240
06	2.6	82%	477
07	2.6	82%	477
03-07 Mean & SE [b]	*2.9 (0.389)*	*79.0% (0.036)*	*421*
08	**2.6**	**80%**	**328**

[a] The production index (PI) is the total poults/total hens observed for July and August = annual production index.

[b] Production Index Mean (*Standard Error*) for 5 previous years.

Figure 2. Wild Turkey Production - Indiana

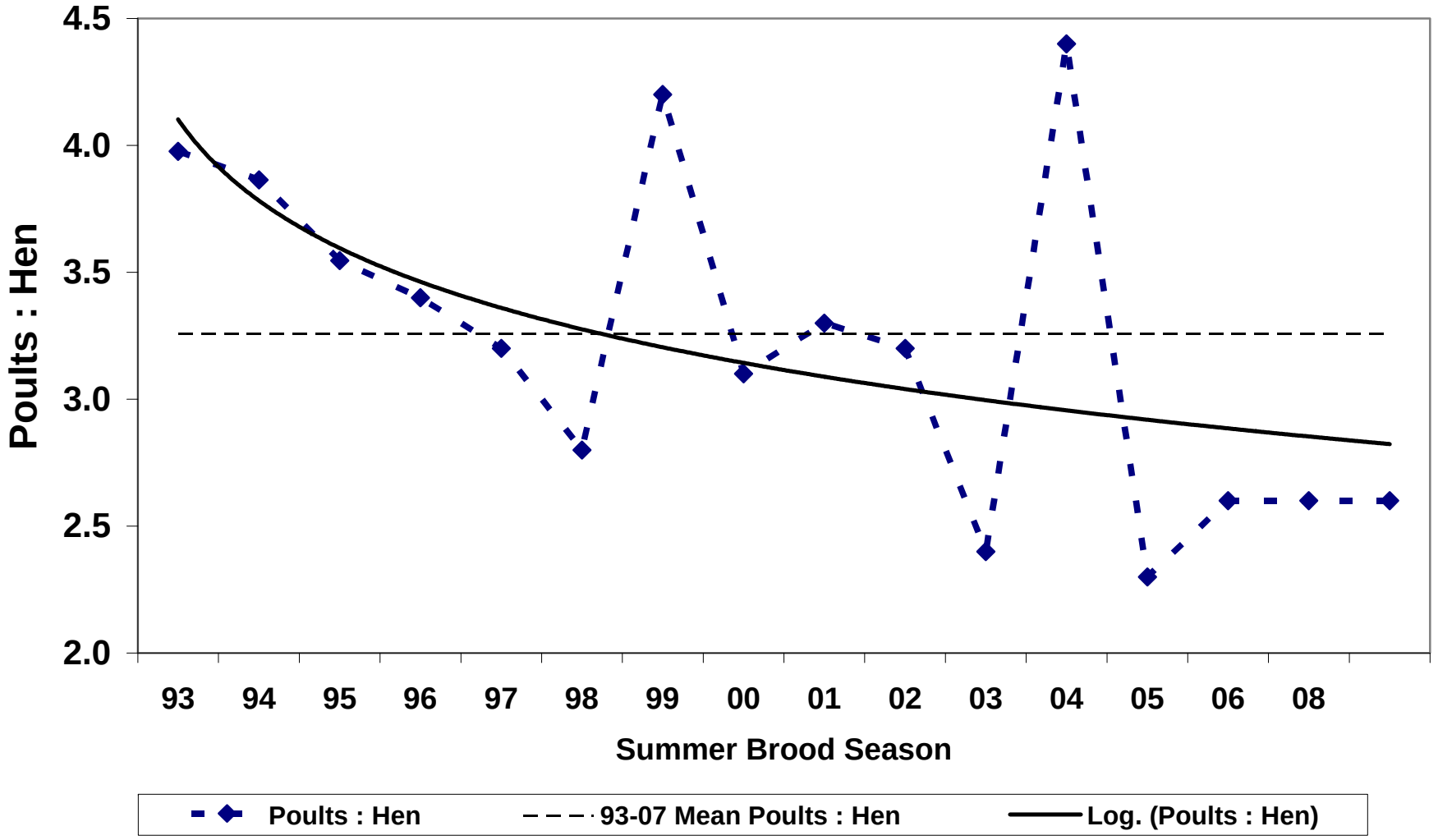

Figure 3. 2008 Summer Wild Turkey Production by Regions